with the ceramic-powder slurry in such a way as to distribute the slurry evenly on the ~~perform~~preform, and then subjecting the body thus obtained to a sintering heat cycle, so as to pyrolyse the polymeric material and obtain a high-porosity ceramic material. The powders of ceramic material are chosen from among mullite powder, alumina powder, zirconia powder, and mixtures thereof, which have a very high degree of purity, controlled grain size, and high specific surface.

Page 10, after the last paragraph insert the following new paragraphs:

The process for producing the particulate filter for diesel engines involves the preparation of a filtering body consisting of a ceramic foam, on which an oxidizing catalyst is deposited. In the process the ceramic foam is produced, starting from a ceramic-material powder-based suspension (slurry), by preparing a preform of polymeric foam material and impregnating the preform with the aforesaid ceramic-powder slurry so as to distribute the slurry evenly on the preform, and by then subjecting the body thus obtained to a thermal cycle of sintering in such a way as to pyrolize the polymeric material and obtain a high-porosity ceramic material having a structure similar to that of the starting polymeric material.

The ceramic-material powder is chosen from among mullite ($3A1_2O_3$-$2SiO_2$) powder, alumina ($A1_2O_3$) powder, and zirconia (ZrO_2) powder, or mixtures thereof, having a purity of over 97%, mean particle size of less than 2 μm, and a specific surface at least greater than 5 m^3/g. The mullite powder has a purity preferably of over 98.7%, a mean particle size of approximately 0.7 μm, and a specific surface B.E.T. preferably greater than 17.

The alumina powder has a purity of over 99%, preferably of over 99.9%, a mean of particle size of less then 1 μm, preferably of the order of 0.3 μm, and a specific surface B.E.T. greater than 7 m^3/g, preferably of the order of 10 m^3/g.

The zirconia powder has a mean particle size of less than 0.8 μm, preferably of the order of 0.35 μm, and a specific surface B.E.T. greater than 5 m^3/g, preferably of the order of 6.9 m^3/g.

The slurry comprises between 57 wt% and 62 wt% of alumina powder with respect to the total powder, and from 38 wt% to 43 wt% of zirconia powder. The slurry comprises between 36 wt% and 41 wt% of mullite powder with respect to the total powder, and from 59 wt% to 64 wt% of zirconia powder. The slurry comprises 26-35 vol% of zirconia powder with respect to the alumina powder. The slurry comprises 40-50 vol% of zirconia powder with respect to the mullite powder.

The thermal cycle of sintering comprises a first phase of heating up to a temperature of 300-500°C at a rate of 0.5 to 1.5°C/min, a second phase of heating up to the maximum temperature at a rate of 3 to 10°C/min, and a subsequent cooling at a rate of 3 to 10°C/min. The maximum temperature is 1500°C in the case of alumina toughened with zirconia, and 1600°C in the case of mullite toughened with zirconia. The slurry comprises an electrosteric dispersant and a binding agent, preferably polyethylene oxide.